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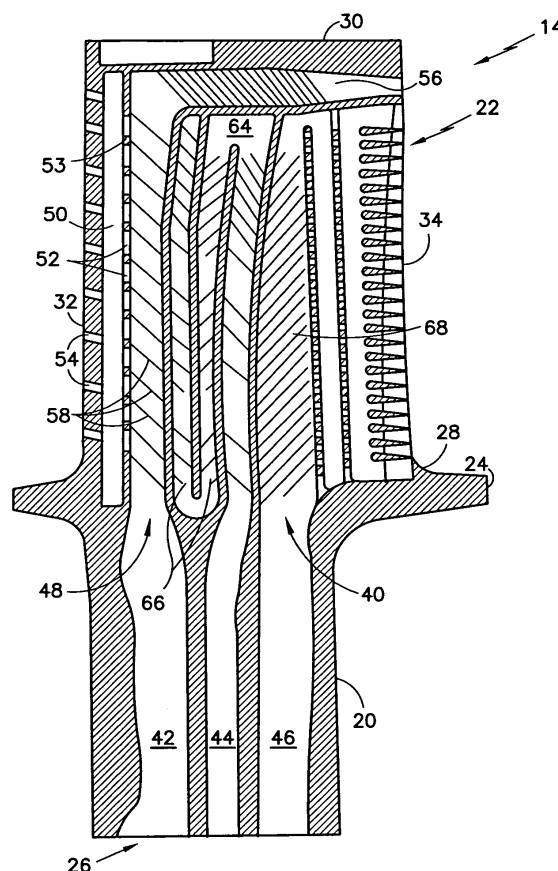
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(54) **Cooled rotor blade with leading edge impingement cooling**

(57) A rotor blade (14) is provided having a hollow airfoil (22) and a root (20). The hollow airfoil (22) has a cavity defined by a suction side wall (38), a pressure side wall (36), a leading edge (32), a trailing edge (34), a base (28), and a tip (30). An internal passage configuration (40) is disposed within the cavity. The configuration includes a first radial passage (48), a second radial passage (50), and a rib (53) disposed between and separating the first radial passage (48) and second radial passage (50). A plurality of crossover apertures (52) are disposed within the rib (53). A portion of the plurality of crossover apertures (52) are oblong having a length (70) extending through the rib (53), and a height (74) and a width (72). The height (74) of each oblong aperture (52) is greater than the width (72). In some embodiments, the oblong crossover apertures (52) are aligned heightwise along the rib (53). The root (20) includes a conduit (42) that is operable to permit airflow through the root (20) and into the first radial passage (48).

FIG.2



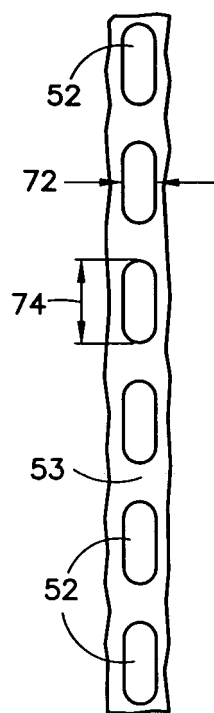


FIG.4



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EUROPEAN SEARCH REPORT

Application Number
EP 05 25 3261

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The present search report has been drawn up for all claims			
Place of search Munich		Date of completion of the search 29 August 2007	Examiner Teusch, Reinhold
CATEGORY OF CITED DOCUMENTS X : particularly relevant if taken alone Y : particularly relevant if combined with another document of the same category A : technological background O : non-written disclosure P : intermediate document T : theory or principle underlying the invention E : earlier patent document, but published on, or after the filing date D : document cited in the application L : document cited for other reasons & : member of the same patent family, corresponding document			

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**ANNEX TO THE EUROPEAN SEARCH REPORT
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This annex lists the patent family members relating to the patent documents cited in the above-mentioned European search report. The members are as contained in the European Patent Office EDP file on
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